CLAIMS

1. An improved ion-selective electrode, comprising:

A. a sensing tip at one end thereof and an electrode chamber at another end thereof remote from said tip,

B. an electrode assembly including a post having first and second ends and an interior conductive lead extending through said post on the interior thereof and in fluid-tight engagement therewith along a portion thereof, said lead continuing exteriorly of said post at said second end and formed into a generally helical coil surrounding said post, said electrode chamber enclosing said post therein and joined in fluid-tight engagement at a first end of said chamber to a first end of said post, and

C. a tube connected to a second end of said chamber and extending toward said sensing tip, said tube providing an electrically-conductive path from said tip to said lead.

2. An improved ion-selective electrode according to claim 1 in which said first end of said post opens into a well into which a first end of said conductive lead extends, said well communicating with the exterior of said electrode chamber.

3. An improved ion-selective electrode according to claim 2 which includes an exterior lead in electrical contact with at least a portion of said interior lead in said well.

4. An improved ion-selective electrode according to claim 3 in which said electrical contact is formed by a mass of electrically conductive material in said well.

5. An improved ion-selective electrode according to claim 1 in which said post has an outwardly flared flange formed at said first end thereof for sealing said post to said chamber.

6. An improved ion-selective electrode according to claim 1 in which said coil is formed on the exterior of said post.

7. An improved ion-selective electrode according to claim 1 in which said post is formed from a glass tube through which said first conductive lead is extended and fused to said lead along said portion to form a fluid-tight glass-to-metal seal therewith.

8. An improved ion-selective electrode according to claim 1 in which the volume of said chamber is at least 4 times the volume of said tube.

9. An improved ion-selective electrode according to claim 1 in which the cross-sectional area of said chamber is at least 4 times the cross-sectional area of said tube.

10. An improved ion-selective electrode according to claim 1 in which the volume of said chamber is at least 4 times the volume of said tube.

11. An improved ion-selective electrode according to claim 1 in which said chamber is connected at said second end thereof to said tube by a section of gradually-reducing diameter.

12. An improved ion-selective electrode according to claim 1 in which said chamber is connected to said tube by means of a gasket encompassing said tube along a portion thereof and in fluid-tight engagement therewith.

13. An improved ion-selective electrode according to claim 12 in which said gasket and at least a portion of said chamber are generally cylindrical in shape, said gasket having first and second flanges thereon encompassing an intermediate necked-in region to form a fluid-tight seal with said chamber.

14. An improved ion-selective electrode, comprising:

A. a sensing tip at one end thereof and an electrode chamber at another end thereof remote from said tip, said chamber having an upper end thereof remote from said tip and a lower end closer to said tip

B. an electrode assembly comprising a conductive coil fixed on the interior of said chamber at said upper end and having a portion thereof extending through said upper end for connection to an external circuit, and

C. a tube connected to the lower end of said chamber and extending toward said sensing tip, said tube providing an electrically-conductive path from said tip to said lead.

15. An improved ion-selective electrode according to claim 14 in which said coil is wrapped around said post.

16. An improved ion-selective electrode according to claim 14 in which said coil is of sufficiently small diameter as to be effectively fixed in place without being sealed or bonded to said post.

17. An improved ion-selective chamber, comprising;

A. a main body enclosing a first portion of half-cell;

B. a housing thermally insulated from said main body and having an electrode assembly forming a second portion of said half-cell therein.

18. An electrode assembly according to claim 17 in which said electrode assembly is located in an uppermost portion of said housing.

19. A cleanable half-cell junction, comprising:

A. a body for containing an electrolyte therein, said body

(1) having an aperture through a wall thereof for passage of fluid therethrough;

(2) having an irregular surface over at least an exterior portion thereof; and

B. having a sleeve closely fitted over at least a portion of said irregular surface to form a channel between said surface and an interior face of said sleeve for passage of fluids therebetween, said sleeve and said body having different coefficients of thermal expansion so that the size of said channel increases when said body and sleeve are heated.